Remarks on Bare Common Nouns In Japanese*

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Abstract: The subsequent remarks bear on the treatment of common nouns and relative clauses in Japanese that behave like regular noun phrases. The paper mainly attempts to show, within the general framework of Montague Grammar, that common nouns appearing with no modifier in a sentence are best treated as term phrases, based on their syntactic and semantic properties.

0. Introduction.

Japanese abounds in expressions like:

1) a. *inu-ga aruku*
dog walk
(lit.) "Dog walk."
b. *Hanako-ga inu-o keru*
Hanako dog kick
(lit.) "Hanako kicks dog."

where CNs (Common Nouns) appear without any modifier and yet seem syntactically and semantically functioning as Ts (Terms). We will call CNs appearing in such a function bare CNs and note their characteristics in this paper. In section 1, we outline the sense in which bare CNs must be regarded as syntactic Ts (1.0) and then characterize their basic semantics (1.1). Section 2 is an examination of the first sub-type, indefinite bare CNs; we will indicate the desirability for treating them as if they were quantified expressions based on facts about reflexivization (2.0), quantifier scope (2.1), negation (2.2), intensional context (2.3), and deductive patterns (2.4). Then in section 2.5 we propose a rule for deriving indefinite bare CNs. Section 3 is an examination of a second sub-type, definite bare CNs. We examine and reject the possibility of regarding them PNs (3.0) and deictic pronouns (3.1). We propose then that definite bare CNs be regarded as being equivalent to definite descriptions, based on facts about reference (3.2). Then in section 3.3 we note some similarities between definite bare CNs and lazy pronouns. Section 4 is a discussion of relative clauses. After preliminary remarks (4.0), we give rules for deriving CNs (which serve as the bases for restrictive relative

* This paper is a slightly modified version of Chapter VI of my 1982 dissertation. For a good introduction to Montague Grammar, see Dowty et al. (1981).

clauses) and for deriving nonrestrictive relative clauses (4.1), which distinction is syntactically motivated for Japanese (4.2). Then in section 4.3 we describe a situation where such distinction is neutralized, followed by a section (4.4) on some remaining problems. Section 5 presents a summary of the paper.

1. Some syntactic and semantic features of bare CNs.

1.0. Bare CNs and Ts.

In every sense of the term, a bare CN functions as a syntactic T: anywhere a T may appear, a bare CN may appear, and *vice versa*.

2) a. Subject:

Hanako/inu-ga kita
Hanako/dog came
(lit.) "Hanako/dog came."

b. Direct object:

Taroo-ga Hanako/inu-o keru
Taroo Hanako/dog kick
(lit.) "Taroo kicks Hanako/dog."

c. Indirect object:

Taroo-ga okasi-o Hanako/inu-ni ataeta
Taroo candy Hanako/dog gave
(lit.) "Taroo gave candy to Hanako/dog."

d. Passive agent:

Taroo-ga Hanako-ni/inu-ni kamareta
Taroo Hanako-by/dog-by was bitten
(lit.) "Taroo was bitten by Hanako/dog."

etc.

Similarly, any rule that affects a T may affect a bare CN:

3) a. Reflexivization:

Hanako/gakusei-ga zibun-o semeru
Hanako/student self accuse
(lit.) "Hanako/student accuses self."

b. Quantification:

Taroo-ga Hanako/gakusei-to kanozyo/kare-no-syoorai-
Taroo Hanako/studdnt-with she/he-'s-future-
nituite hanasu
about talk
(lit.) "Taroo talks with Hanako/student about her/his future."

c. Conjunction Particle Insertion:

i. *Taroo to Hanako to-ga kita*
Taroo and Hanako and came
"Taroo and Hanako (and) came."

ii. *inu to gakusei to-ga kita*
dog and student and came
(lit.) "Dog and student (and) came."

etc.

But if a CN appears with a modifier like a Q, a T and a CN are no longer substitutable without affecting the grammaticality:

4) i. a. *dareka gakusei-ga kuru*
some student come
"Some student comes."

b. **dareka Hanako-ga kuru*

ii. a. *gakusei-ga dareka kuru*
student some come
"Some student comes."

b. **Hanako-ga dareka kuru.*

So the question is: why does only a bare CN function syntactically like a T? and how is the distinction between a bare CN and other "ordinary" CNs to be reflected? If we were to syntactically differentiate Ts and bare CNs, it would appear that we would have to double the number of syntactic rules so that corresponding to every rule that has to do with a T, we have a rule that has to do with a bare CN; moreover, such a pair of rules must have exactly the same syntactic operations.[1] This is tantamount to saying that we would be missing a syntactic generalization that is obviously there. If we can somehow find a way for treating bare CNs as syntactic Ts, then the features that we noted with respect to examples like (2)–(4) all follow from the syntactic properties of Ts. We cannot simply declare, however, that a bare CN be a T because their semantic types differ: a CN is of semantic type ⟨e, t⟩ while a T is of type ⟨⟨s, ⟨e, t⟩⟩, t⟩. Thus whether we achieve such apparent category change from CN to T by some reasonably motivated syntactic rule or by by-fiat declaration, we have to be able to back it up with a corresponding semantic characterization that would have an effect of type shift. Before we can examine this possibility, let us below see what kind of meaning bare CNs most closely represent in Japanese sentences.

1.1. Definite and indefinite bare CNs.

Observe now sentences like the following that contain bare CNs; these seem systematically ambiguous between the two readings as given where the interpretation of the bare CN is concerned.

5) a. *Ziroo-ga inu-o ketta*
Ziroo dog kicked

i. "Ziroo kicked a dog."
ii. "Ziroo kicked the dog."

b. *Hanako-ga otoko-o nagutta*
Hanako man hit
i. "Hanako hit a man."
ii. "Hanako hit the man."

The ambiguity thus has to do with an indefinite and definite interpretation of the bare CN *inu* "dog" and *otoko* "man". (5a), for instance, is appropriate to describe Ziroo's "dog-kicking" under either of the two situations like:

6) a. Ziroo, overtaken by a childish temper tantrum, indulges himself in a kicking spree to steam out his frustrated feelings; he kicks everything in his way—a can, a rock, an electric pole, a dog, or whatever.
b. A dog comes barking at Ziroo, who thereby retaliates by kicking the dog.

Put in a discourse, the particle *wa* is to be preferred over *ga* if the sentences in (5) are to be used in isolation (since it is most likely that Ziroo or Hanako is the topic of conversation). But clearly the definite and indefinite ambiguity is there. If one is not entirely happy with sentence (5a) in isolation under the situations (a) and (b) above, we can embed it and say, for instance:

7) a. *hazime-ni Ziroo-wa akikan-o ketta; tugi-ni isi to dentyuu-o ketta. Sono*
first Ziroo empty can kicked; next rock and electric pole kicked. the
tugi-ni Ziroo-ga inu-o ketta toki keikan-ga kita.
next time Ziroo dog kicked when policeman came.
"First Ziroo kicked an empty can; next he kicked a rock and an electric pole. When he kicked a dog the next time, a policeman came."

b. *Hanako-wa Ziroo-ga inu-o ketta node gakkari sita*
Hanako Ziroo dog kicked because was disappointed
"Hanako was disappointed because Ziroo kicked the dog."

Let us call those bare CNs that have an indefinite interpretation indefinite (bare) CNs, and those with a definite reading definite (bare) CNs. While it would be ideal if we could find a unique semantic treatment for both of these types of bare CNs, we will discuss them separately in the absence of plausible pragmatic characterizations of these CNs. Our task is then to specify how such distinct readings may be derived within our grammar without too much syntactic and semantic ad-hocity. We will discuss indefinite bare CNs first in section 2, and then definite bare CNs in section 3.

2. Indefinite bare CNs.

CNs of this type share several characteristics of quantified expressions, especially exis-

tentially quantified CNs. Let us see below (2.0–2.4) in what respects indefinite bare CNs behave syntactically and semantically like existentially quantified CNs. Our examination will show that Japanese indefinite bare CNs cannot be treated like English bare nouns in the manner of Carlson (1978), who convincingly argues that a bare noun like *dogs* as in:

8) a. Dogs are barking outside.
   b. Dogs are sleeping on the doormat.

is to be semantically treated on a par with proper nouns based on observations about quantifier scopes, negation, intensional contexts, etc. and that the existential quantification that sentences of (8) seem to require with respect to the subject noun *dogs* is to be derived from the translation of each predicate involved. For details, see Carlson (1978). Though Carlson's approach is interesting and informative and seems to offer a genuine alternative to our proposal below, some of the features noted below about Japanese indefinite bare CNs indicate, I believe, that Japanese bare CNs must be considered to contain suitable quantifiers in their translations so that they may semantically behave like quantified CNs.

2.0. Reflexivization.

As is well known, it is generally the case that whether one repeats or reflexivizes a quantified expression results in a semantic difference.

9) i. a. *minna-ga minna-o aisiteiru*
   everyone everyone love
   "Everyone loves everyone."
   b. *minna-ga zibun-o aisiteiru*
   self
   "Everyone loves himself."
   ii. a. *dareka-ga dareka-o semeru*
   someone someone accuse
   "Someone accuses someone."
   b. *dareka-ga zibun-o semeru*
   self
   "Someone accuses himself."

In each case, (a) and (b) do not entail each other. This characteristic is not shared by a PN.

10) a. *Hanako-ga Hanako-o semeru*
   Hanako Hanako accuse
   "Hanako accuses Hanako."
   b. *Hanako-ga zibun-o semeru*
   self
   "Hanako accuses herself."

Though (10a) is a little awkward, there is no doubt that it entails (10b), and *vice versa*.

Indefinite bare CNs follow the pattern of quantified CNs so that a reflexivized version (b) below is not synonymous with the non-reflexivized version (a):

11) i. a. *gakusei-ga gakusei-o ketta*
student student kicked
"A student kicked a student."
b. *gakusei-ga zibun-o ketta*
self
"A student kicked himself."
ii. a. *inu-ga inu-no-sippo-o oikakeru*
dog dog-'s-tail chase
"A dog chases a dog's tail."
b. *inu-ga zibun-no-sippo-o oikakeru*
self-'s-tail
"A dog chases its own tail."

If we assume that an indefinite bare CN is in some sense an existentially quantified CN, this fact about reflexivization will automatically follow from the general properties of quantified expressions. The translations of (11ia) and (11ib), for instance, will be[2]:

12) a. (∃x)[*gakusei'*(x) & (∃y)[*gakusei'*(y) & *keru'*$_*$(x, y)]]
b. (∃x)[*gakusei'*(x) & *keru'*$_*$(x, x)].

Clearly (a) and (b) do not entail each other.

2.1. Q scopes.

Note that Qs (Quantifiers) participate in scope ambiguity phenomena.

13) a. *minna-ga dareka-o ketta*
everylne someone kicked
i. "For everyone, there was someone he kicked."
ii. "There was someone such that everyone kicked him."
b. *ooku-no hito-ga hutari-no zyoyuu-o mita*
many person two actress saw
i. "Of each and every one of a group of people who were many in number, he or she saw two actresses."
ii. "There were two actresses such that many people saw them."

Indefinite bare CNs also show such scope interaction. Observe:

14) a. *minna-ga inu-o oikaketa*
everyone dog chased
i. "For everyone, there was a dog he chased."
ii. "There was a dog everyone chased."

b. *subete-no kodomo-ga kame-o izimeteita*
all child turtle tease
i. "For every child, there was a turtle he was teasing."
ii. "There was a particular turtle every child was teasing."

Thus, in the beginning part of the famous folktale *Urashima Taroo*, in which, Taroo, a fisherman, upon coming to a shore, finds children beating and teasing a turtle, one may use (14b) to express Taroo's experience with the intended reading (ii). But more normally (14b) may mean (i). There is thus no doubt that indefinite bare CNs participate in scope ambiguity phenomena just like any other quantified CN expression.

2.2. Negation.

Recall here Kuno's (1980: 78) position that negation takes the narrowest scope possible in Japanese except when a sentence of the form *t no da* or a sentence that contains a quantifier is negated, in which case the scope of negation may be wider than other scope interactors within such sentences. This seems generally true; A prime example showing such scope interaction with negation is:

15) *minna-ga ko-nakatta*
everyone come-did not
"Everyone did not come."

This may mean either "No one came," or "Not everyone came." It may thus be considered that one of the characteristics of quantified expressions is that they may semantically take a narrower scope than the negative. But now observe the following sentences:

16) a. *Taroo-ga hon-o yom-anakatta*
Taroo book read-did not
"Taroo did not read a book."
b. *Taroo-wa Hanako-ni zyoyuu-o syookais-inakatta*
Taroo Hanako actress introduce-did not
"Taroo did not introduce an actress to Hanako."

These sentences may mean respectively:

17) a. "Taroo did not read any book."
b. "Taroo did not introduce any actress to Hanako."

If an indefinite bare CN did not have any quantifier sense associated with it, it would be difficult to imagine how one might derive these readings, especially given the tendency of negative to take the narrowest scope possible within a sentence in the absence of a Q in Japanese. But if, for instance, we sasume that a bare CN *hon* "book" in (16a) is to be translated as $\lambda P(\exists x)[hon'(x) \& \check{}P(x)]$, then reading (17a) is generated by simply negating the sentence:

18) *Taroo-ga hon-o yomu*
Taroo book read
"Taroo reads a book."

The rule of negayion will assign the translation that is equivalent to:

19) $\sim(\exists x)[$*hon*' (x) & *yomu*' $*(t, x)]$.

2.3. Intensional context.

Consider sentences like:

20) a. *Taroo-wa Hanako-to kekkons-itagatta*
Taroo Hanako-with marry-wanted (to)
"Taroo wanted to marry Hanako."
b. *Taroo-wa amerikazin-to kekkons-itagatta*
American-with
"Taroo wanted to marry an American."

While (a) is unambiguous, (b) is not, the ambiguity here revolving on what is known in linguistics circles as specificity. Thus (b) is appropriate to describe either the situation in which there was one particular American girl that Taroo wanted to marry or the situation in which Taroo wanted to marry any girl whosoever happened to be an American. Although there may be several ways to reflect this ambiguity[3], it can be most naturally reflected as a difference of scope if we assume that a quantifier is involved in the translation of a bare CN. Thus, assuming that *amerikazin* "American" in (20b) translates as $\lambda P\ (\exists x)\ [$*amerikazin*' (x) & $\check{}P\ (x)]$, (20b) can be assigned two different translations that are equivalent to each of the following expressions.

21) a. *tagaru*' (t, $\hat{}$*kekkonsuru*' ($\hat{}\lambda P\ (\exists x)\ [$*amerikazin*' (x) & $\check{}P(x)]$))
b. $(\exists x)\ [$*amerikazin*' (x) & *tagaru*' (t, $\hat{}$*kekkonsuru*' ($\hat{}\lambda P\check{}P\ (x)$))].

(21a) indicates that Taroo stands in *tagaru* "want (to)" relation to the property of marrying an American, while (21b) shows that there is a certain individual who is an American and that Taroo stands in *tagaru* "want (to)" relation to the property of marrying that individual.

Similarly, the following sentence is ambiguous as to the extensionality of the object.

22) *Taroo-ga kappa-o sagasu*
Taroo kappa seek.
"Taroo seeks a kappa."

Again by taking the bare CN *kappa* "kappa" to be translated as $\lambda P(\exists x)\ [$*kappa*(x) & $\check{}P(x)]$, such ambiguity may be revealed as a difference of scope involving an intensional context created by the verb *sagasu* "seek" and a quantifier that is present in the translation of *kappa* "kappa".

23) a. *sagasu*'(t, $\hat{}\lambda P(\exists x)\ [$*kappa*'$(x)$ & $\check{}P(x)]$
b. $(\exists x)\ [$*kappa*'(x) & *sagasu*'$*(t, x)]$.

Thus (a) says Taroo stands in *sagasu* "seek" relation to the property of some kappa while (b) says there is a specific kappa such that Taroo stands in *sagasu* "seek" relation to it.

2.4. Deduction.

If we assume an existential quantifier in the translation of a bare CN, we can establish proof-theoretic validity of entailments having to do with indefinite bare CNs as an automatic consequence of rules of inference of existential quantifiers. For instance, given the usual assumption that Ziroo is a human, the first line (a) below entails (b):

24) a. *Ziroo-ga aruku*
Ziroo walk
"Ziroo walks."
b. *hito-ga aruku*
man walk
"A man walks."

Given the translation of each line (a) and (b) above as:

25) a. *aruku*'(x)
b. (∃x) [*hito*'(x) & *aruku*'(x)],

we can derive (25b) as conclusion from (25a) straightforwardly:

26) 1. *aruku*'(z) : assumption
2. *hito*'(z) : assumption
3. *aruku*'(z) & *hito*'(z) : conjunction
4. *hito*'(z) & *aruku*'(z) : commutation
5. (∃x) [*hito*'(x) & *aruku*'(x)] : existential generalization.

Since the logical validity of entailments and others are based on a model in intensional logic, the proof theoretic rules of inference are, strictly speaking, dispensable in favor of semantic evaluation. But then, in order to establish the semantic validity of entailment that obtains in (24), it is essential that we be able to translate them as (25), which can then be semantically evaluated. So either way the conclusion is the same; it is best to assume a quantifier in the translation of an indefinite bare CN in Japanese.

2.5. A prprosed rule for indefinite bare CNs.

We have thus far seen the desirability of regarding indefinite bare CNs as syntactic and semantic Ts that are parallel to existentially quantified CNs. We now turn to the problem of deriving a T from a CN that does not conflict with the semantics of an indefinite bare CN. Several alternatives suggest themselves, and I would like to outline two of them below. (One might contemplate applying an approach like Carlson's (1978) to the description of Japanese bare CNs, but as mentioned at the outset, unless bare CNs are considered to contain quantifiers in their translations, scope interactions as we saw above in sections 2.1 and 2.3 are very difficult to explain.)

2.5.1. *First alternative: a lexical approach.*

Since an indefinite bare CN like *inu* "dog" or *gakusei* "student" as in:

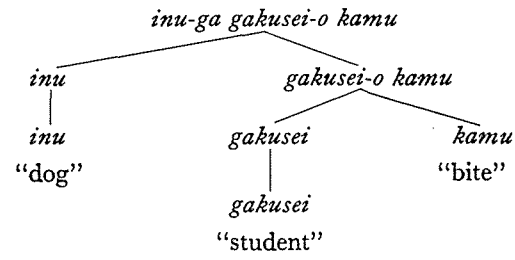
27) *inu-ga gakusei-o kanda*
dog student bit
"A dog bit a student."

has an existential sense attached to it, the obvious way to reflect this is to set up a rule that converts every CN to a corresponding bare CN, which is syntactically a T. Such a rule may read like:

28) S29. (Indefinite Bare CN)
If $\alpha \in P_{CN}$, then $F_{27}(\alpha) \in P_T$, where $F_{27}(\alpha) = [\alpha]_T$.
T29. If $\alpha \in P_{CN}$ and α translates as α', then $F_{27}(\alpha)$ translates as $\lambda P(\exists x)[\alpha'(x) \,\&\, \check{}P(x)]$.

Given this rule, (27), for instance, may be derived in the following manner:

29)



S29 in a sense is a claim that in Japanese any CN, whether basic or derived, may be turned into an indefinite bare CN, which it seems is true, Some of the examples of derived CNs turned bare CNs are:

30) a. *Hanako-ga rippa-na zyoyuu-o naguru*
Hanako fine actress hit
"Hanako hits a fine actress."
b. *Taroo-ga moto daizin-o mitukeru*
Taroo former Minister find
"Taroo finds a former Minister."
c. *Taroo-ga Pikaso-ga kaita e-o katta*
Taroo Picasso painted picture bought
"Taroo bought a picture Picasso painted."

Thus, in isolation, S29 captures most straightforwardly and most simply the syntax and semantics of indefinite bare CNs.

2.5.2. *Second alternative: a syntactic approach.*

Consider a sentence like:

31) *Taroo-ga zyoyuu-o aisiteiru*
Taroo actress love
"Taroo loves an actress."

Suppose a sentence like the following is to be derived in part by combining Q *dareka* and a CN *zyoyuu* "actress".

32) *Taroo-ga dareka zyoyuu-o aisiteiru*
Taroo some actress love
"Taroo loves some actress."

Note that both (31) and (32) translate as:

33) $(\exists x)\,[zyoyuu'(x)\ \&\ aisu'\ {}_{*}(t, x)]$.

Since the only difference between (31) and (32) is the absence or presence of the Q *dareka*, it is only natural that one would want to attempt to capture their syntactic relationship. This may be achieved, for instance, by a constant deletion like:

34) SS14'. (*dareka*-deletion)

X,	Q,	CN,	Y
1,	2,	3,	4
1,	0,	3,	4

where i) Q=*dareka*, and
ii) 2+3=T.

TT14'. Identity mapping.

Given SS14', (31), for instance, can be derived from (32) directly by deleting *dareka*:

35) *Taroo-ga zyoyuu-o aisiteiru* : SS14'
|
Taroo-ga dareka zyoyuu-o aisiteiru

SS14' thus seems to claim that whenever the sequence *dareka CN* appears as a T, *dareka* may be deleted to form an indefinite bare CN. This is confirmed, for instance, by sentences like the following, where the presence or absence of *dareka* does not affect the grammaticality or the meaning of each sentence:

36) a. *Taroo-ga (dareka) zyoyuu-o naguru*
Taroo (some) actress hit
"Taroo hits an actress."
b. *Hanako-ga (dareka) moto kasyu-o sagasu*
Hanako (some) former singer seek
"Hanako seeks a former singer."
c. *Taroo-ga (dareka) amerikazin-to kekkons-itagaru*
Taroo (some) American-with marry-want (to)

"Taroo wants to marry an American."

This treatment of course does not necessarily mean that sentences with or without *dareka* are pragmatically equivalent in the sense that they are always interchangeable in any discourse situation. Thus as a story-starter, the following, for instance, sounds most natural without *dareka*:

37) *mukasi aru tokoro-ni (?dareka) oziisan-ga sundeita*
once in a certain place (some) old man was living
"Once there lived an old man in a certain place."

But this aspect seems to belong more appropriately to the problem of style and usage, and hence does not constitute a serious counterexample to the approach in question.

Similarly, the fact that no plausible source exists for an indefinite bare CN when this denotes an animal as in:

38) *Taroo-ga inu-o keru*
Taroo dog kick
"Taroo kicks a dog."

may not be so serious an objection since the following could be considered as its source:

39) *Taroo-ga nanika inu-o keru*
'Taroo some(thing) dog kick
"Taroo kicks some dog."

if we let Q in S14' be either *dareka* or *nanika* and if, furthermore, we can expect a reasonable lexicographic study on the usage of the word *nanika* "some(thing)".

As for the choice between the first and the second alternatives, it is probably immaterial whichever we choose because of the limited scope of data we are covering in this study; since the first lexical approach seems to avoid some apparent problems the second syntactic approach faces, we will, for the purpose of the present discussion, opt for the first alternative, noting that the decision is more arbitrary than grounded in some principle.[4)]

3. Definite bare CNs.

The notion definiteness[5)] seems to be associated with several types of syntactic constructions; the purpose of this section is to propose a translation for the definite bare CN that is more consistent than other approaches that are here considered.

3.0. PNs and definite bare CNs.

Since a PN is a definite noun in every sense of the term in that it can always pick up a particular individual at any index,[6)] we might consider, for instance, *inu* in the second sentence to be a PN of some sort.

40) *Taroo-ga kado-o magaru to inu-ga hoetekita.*
Taroo corner turn when dog came barking
"When Taroo turned around a corner, a dog came barking.

Taroo-wa bikkurisite inu-o ketobasita
Taroo surprised dog kicked off
"Surprised, Taroo kicked off the dog."

Suppose we propose a function F_{50} that converts a CN *inu* to a PN (or rather T) and assign, via a translation rule, the following translation:

41) $\lambda P^{\vee}P(a)$, where a is a variable over individual dogs.

Suppose, furthermore, that the dog that Taroo kicked above is named Shiro. Then the second sentence in (40), omitting other details, would be equivalent to:

42) *ketobasu'* $*(t, s)$ (*ketobasu* "kick off").

But such a translation misses the fact that Taroo kicked the dog that came barking at him—i.e., the contextual dependency of the reference of *inu* "dog" between the first and the second sentence; this is so because a PN can pick up its referent regardless of contexts. Thus it appears a definite bare CN must be considered something other than a PN. In fact, given the dependency of the preceding linguistic expression and what follows it, one might naturally wonder that it might be some kind of a pronoun, to which alternative interpretation I turn below.

3.1. Pronouns and definite bare CNs.

Before discussing the possibility of a definite bare CN being some sort of a pronoun, let us first see the usage of a deictic pronoun and briefly outline how its interpretation is effected.

43) *Hanako-ga kita. Kanozyo-wa byooki datta.*
Hanako came she was sick
"Hanako came. She was sick."

Since inter-sentential quantification is out of question, there being many cases where deictic pronouns appear discourse initially, the second sentence is best regarded as being equivalent to[7]:

44) *byookida'* (x_i).

The value of x_i is then determined relative to a context. Its reference in other words depends on the contextual assignment of values to variables. This accords with our intuition since the second sentence of (43), if taken in isolation, is neutral as to who the referent of *kanozyo* "she" is.

Something similar is going on in (40). Thus if we take the second setnence in isolation, we cannot really tell which particular dog Taroo kicked; it is only through the help of the first sentence that we can get some idea as to which dog Taroo kicked. Although the possibility definitely exists that Taroo kicked an entirely different dog, the flow of discourse certainly

points to the most likely situation; that is, Taroo kicked the dog that came barking at him. Thus, instead of (42), we can come closer to the representation of the definitie bare CN if we have the translation:

45) *ketobasu'* $*(t, x_i)$.

Since x_i must be a dog, we can reflect this by assigning the translation like the following to the second sentence of (40).

46) *inu'* (x_i) & *ketobasu'* $*(t, x_i)$.

Suppose then that a definite bare CN is in general derived from a sentence containing an occurrence of a subscripted pronoun in the following manner:

47) (Definite Bare CN)

If $\alpha \in P_{CN}$, $\phi \in P_t$ and ϕ contains an occurrence of PRO_i, then $F_{51,i}(\alpha, \phi) \in P_t$, where $F_{51,i}(\alpha, \phi)$ is the result of replacing every occurrence of PRO_i by α.

(Translation)

If $\alpha \in P_{CN}$, $\phi \in P_t$ and α, ϕ translate as α', ϕ' respectively, then $F_{51,i}(\alpha, \phi)$ translates as α' (x_i) & ϕ'.

This approach can syntactically account for the termhood of the definite bare CN and semantically indicate the contextual dependency of its interpretation. Omitting details, the second sentence of (40) can be generated in the following manner.

48) *Taroo-ga* $[[[inu]_{CN}]_T$ *o*$]_2$ *ketobasu* : (47)

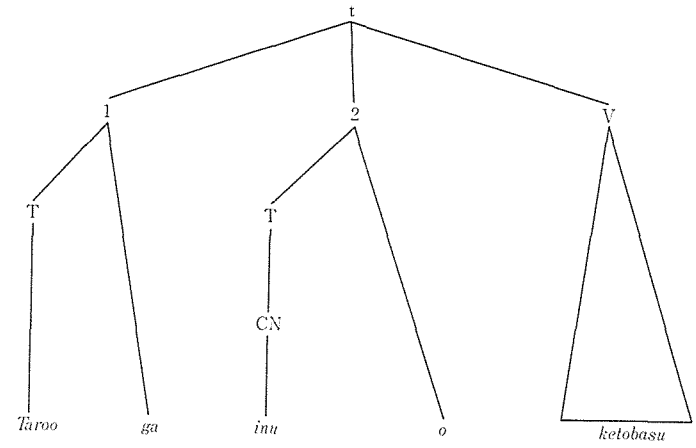
$[inu]_{CN}$	*Taroo-ga* $[[PRO_i]_T$ *o*$]_2$ *ketobasu*
"dog"	"Taroo kicks PRO_i off."

Translation:

1. *Taroo-ga* PRO_i*-o ketobasu* $\Rightarrow$ *ketobasu'* $*(t, x_i)$
2. *Taroo-ga inu-o ketobasu* $\Rightarrow$ *inu'* (x_i) & *ketobasu'* $*(t, x_i)$: (47).

Note that the top line of the analysis tree (48) is equivalent to the tree:

49)



Some features of this approach to the treatment of the definite bare CN is 1) that the anaphoricity of the definite bare CN is based on the anaphoricity of a deictic pronoun, 2) that the definiteness of the definite bare CN is grounded in the definiteness of a deictic pronoun, 3) that the bare CN acquires its termhood only derivatively by replacing a deictic pronoun, and 4) that the interpretation of a definite bare CN is completely parallel to the interpretation of a deictic pronoun. In this regard it is to be noted that the replacement of *inu* in the second sentence of (40) by the pronoun *sore* "it" results in a more or less synonymous discourse continuation. Thus the following discourse appears no different from (40) to describe the situation where Taroo kicked off the dog that came barking at him.

50) *Taroo-ga kado-o magaru to inu-ga hoetekita.*
Taroo-wa bikkurisite sore-o ketobasita.
it
"When Taroo turned around a corner, a dog came barking. Surprised, Taroo kicked it off."

This treatment thus has a certain appeal both syntactically and semantically.

In spite of some attractive features of (47), it appears that this treatment is inadequate in at least two respects. First, there are cases where the definiteness of a definite bare CN does not seem to depend on the prior discourse; this is especially true of relative clause constructions Thus the following sentence seems complete on its own.

51) *Taroo-ga tuki-ni saisyo-ni orita hito-o naguru*
Taroo moon-at first landed person hit
"Taroo hits the person who first landed on the moon."

No contextual aid is necessary in evaluating the truth value of (51). But since an approach like (47) will assign a translation to (51) roughly like the following:

52) [*hito*' (x_i) & *tuki-ni saisyo-ni oriru*' (x_i)] & *naguru*' $*(t, x_i)$,

it makes (51) as if it were making a deictic reference to someone that occurs prior to (51).

While the above may not be too serious a problem, an example like the following poses an insurmountable difficulty for an approach like (47).[8)]

53) *kyonen gassyuukoku daitooryoo-ga nihon-ni kita.*
last year U.S. President Japan-to come
"Last year the U.S. President came to Japan."

rainen mo gassyuukoku daitooryoo-wa nihon-ni kuru daroo
next year too U.S. President Japan-to will come
"The U.S. President will come to Japan next year, too."

Disregarding the time adverbial, an approach like (47) will assign to the second sentence above a translation like the following, where W is a future tense operator.

54) W [*daitooryoo*' (x_i) & *nihon-ni*' (^*kuru*') (x_i)].

But note that while the translation (54) is fine so long as it is the same President that will be visiting Japan next year, this cannot express the meaning that the second sentence of (53) more normally has which may be paraphrased as[9]:

55) Whoever is the U.S. President next year will visit Japan.

This is because a context of use can assign only one value at a time to a variable; hence x_i in (54) must necessarily be assigned a particular individual for a given context of use. What is not expressed in (54), in other words, is the "whoever" sense. This, it seems to me, is a consequence of trying to treat a definite bare CN on a par with a deictic pronoun as in (47). What we need here is some appropriate quantification over individuals rather than a direct assignment of a particular individual to a variable relative to a given context.

It appears that whenever we have an intensional or opaque context, a similar problem will crop up; this is understandable because it is such a context where the traditional law of substitution of identicals fails, and hence at least in principle, no binding relation should obtain between the referent of an expression α within suc a context and that of the same expression α outside it, while it is exactly such referential dependency a successful use of a deictic pronoun as an inter-sententially bound variable depends upon. Another similar example that points toward the inadequacy of an approach like (47) is:

56) *Taroo-wa eigo-no wakaru zyosei-o sagasu si Hanako mo eigo-no*
Taroo English understand woman seek and Hanako too English
wakaru zyosei-o sagasu
understand woman seek
"Taroo seeks the woman who understands English, and Hanako seeks the woman who understands English, too."

It is to be noted that (47) wrongly predicts that in (56) Hanako seeks a particular woman that is referentially bound with the woman Taroo seeks.

3.2. Definite description and definite bare CNs.

In order to express the meaning (55), it appears it is best to regard *gassyuukoku daitooryoo* "U.S. President" in the second sentence of (53) as a definite description. This will yield a translation equivalent to:

57) W [*nihon-ni*' (^*kuru*') ιx [*daitooryoo*' (x)]]

or

58) W [(∃x)[(∀y)[*daitooryoo*' (y) ↔ x=y] & *nihon-ni*' (^*kuru*') (x)]].

(57) or (58) thus says that there will be one and only one person such that he is the U.S. President and he visits Japan. Such a translation will yield intensional reading to the second conjunct of (56), too. Moreover, treating a definite bare CN as a definite description also

sourmounts the first difficulty noted with respect to (51) about the approach (47) because, other things being equal, the interpretation of a sentence containing a definite description is not affected by a specific contextual assignment of values to variables.

As for the referentially bound cases like (40), this should be what we predict if we regard the second occurrence of *inu* to be a definite description, for, omitting details[10], (40) will be equivalent to:

59) 1. (∃x)[*inu*' (x) & *hoeru*' (x)]
(*inu* "dog"; *hoeru* "bark")
2. (∃x)[(∀y)[*inu*' (y) ↔ x=y] & *keru*' *(t, x)]
(*keru* "kick")

From these we can derive the conclusion.

60) (∃x)[[*inu*' (x) & *hoeru*' (x)] & *keru*' *(t, x)]]

by familiar rules of logic.

It appears then that it is descriptively most adequate if we can regard a definite bare CN as semantically equivalent to a defininite description. As was the case with an indefinite bare CN, we propose then the following category changing rule for deriving definite bare CNs for Japanese.

61) S30. (Definite Bare CN)
If $\alpha \in P_{CN}$, then $F_{28}(\alpha) \in P_T$, where $F_{28}(\alpha) = [\alpha]_T$.
T30. If $\alpha \in P_{CN}$ and α translates as α', then $F_{28}(\alpha)$ translates as $\lambda P^{\vee} P(\iota x[\alpha'(x)])$.

It is to be hoped that future research on the usage of bare CNs in Japanese will reveal under what circumstances they may be used as indefinite or definite, a question that is beyond the scope of the present study.

3.3. Lazy pronouns and definite bare CNs.

Cooper (1979) notes that a sentence like the following exemplifies what is called a lazy pronoun (cf. footnote 8 above)[11].

62) (=Cooper's (35a))
This year the president is a republican. Next year he will be a Democrat.

He says that (62) "can be interpreted in such a way that it does not require that the president (in 1976), Gerald Ford, is going to become a Democrat next year but rather that the next president of the United States will be a Democrat (p. 73)." In other words, while an ordinary pronoun typically refers to some particular individual, *he* in (62) appears to be used as a substitute for the expression *the president*. Similarly Karttunen's well-known example (given as (47) in Cooper (1979: 77))[12]:

63) The man who gave his paycheck to his wife was wiser than the man who gave it to his mistress.

exemplifies a parallel phenomenon; *it* in this sentence is not referring to any particular individual nor is it bound by any T phrase; it is simply the case that *it*, as it were, is used instead of the expression *his paycheck*. English thus seems to have a full-fledged use of a pronoun as a lazy pronoun. Japanese, which is often said to lack a "rich" pronoun system, on the other hand, seems to have only a limited use of lazy pronouns. Note for instance that if we replace *gassyuukoku daitooryoo* "U.S. President" in the second sentence of (53) with *kare* "he", as in the following, we only get the bound reading:

64) *kyonen gassyuukoku daitooryoo-ga nihon-ni kita.*
last year U.S. President Japan-to came
"Last year the U.S. President came to Japan.

rainen mo kare-wa nihon-ni kuru daroo
next year too he Japan-to will come
"He will come to Japan next year, too."

Suppose Jimmy Carter came to Japan in 1980 and that (64) is a mini-discourse that took place sometime in 1981. Then the second sentence is equivalent to "Jimmy Carter will come to Japan in 1982, too." Similarly, in the following example, *kanozyo* "her" can only refer to the actress Taroo respects or someone deictically referred to but never the actress Ziroo respects, a possibility a lazy pronoun allows for[13].

65) *Taroo-wa zibun-ga sonkeisuru zyoyuu-o nagutta.*
Taroo self respect actress hit
"Taroo hit the actress he respected.

Ziroo mo kanozyo-o nagutta.
Ziroo also her hit
"Ziroo also hit her."

Kanozyo "her" here cannot be sloppily or lazily interpreted to be used for the expression *zibun-ga sonkeisuru zyoyuu* "actress self respects". In order to have the lazy reading, we have to use the CN *zibun-ga* (actually PRO_i-*ga*) *sonkeisuru zyoyuu*; that is to say, we have to repeat the full expression. In general *kare* "he" and *kanozyo* "she", it seems, can only be used as bound pronouns or deictic pronouns, and whenever we need lazy reading as in (62), we have to repeat the full (definite) CN. *Sore* "it", on the other hand, does have a lazy pronoun reading as in:

66) (This is a slight variation of (63).)
Taroo-wa zibun no kyuuryoo-o tuma-ni watasita ga Ziroo-wa sore-o mekake-ni watasita
Taroo self's paycheck wife-to gave but Ziroo it mistress gave
"Taroo gave his paycheck to his wife, but Ziroo gave it to his mistress."

Here *sore* "it" clearly refers to Ziroo's paycheck; hence it is being used as a mere substitute for the expression *zibun no kyuuryoo* "self's paycheck". I do not know why there is such an apparent hiatus in the lazy pronoun usage between *sore* "it" on one hand and *kare* "he" and *kanozyo* "she" on the other hand. One thing that is clear though is that where English employs *he* and *she* as lazy pronouns, Japanese repeats a full CN (or a T depending on the case), thereby enhancing the oft-noted tendency of Japanese to repeat, rather than pronominalize, nouns and noun phrases.

4. Relative clauses.

4.0. Preliminaries.

Relative clauses in Japanese are basically CN-like; thus, formally, there is not much difference between bare CNs of the type we have been concerned with and relative clause constructions. Since both are members of P_T (Term Phrases), we might as well call them both bare CNs. The purpose of this section is to touch on the distinction of restrictive and nonrestrictive relative clauses in Japanese since the distinction bears on the way we formulate our rules of relative clause formation and their translations. Those concepts that have equally, if not more, important relevance to relative clauses, such as topic (cf. Kuno (1973; Chapter 21), Muraki (1974; Chapter IV)), tense and aspect (cf. Josephs (1972)), and other related constructions (cf. Teramura (1969)) cannot, unfortunately be discussed, these being, from the viewpoint of our grammatical framework, the toughest "toughies" and hence beyond the modest scope of this paper.[14] We will also ignore, regrettably, the important question on the conditions of relativization (cf. Inoue (1978)), noting simply that relativization in Japanese, if it is a deletion as opposed to pronoun-retention relativization[15], seems to be controlled more or less by Keenan-Comrie hierarchy[16] and that Ross's complex NP constraint has only a limited applicability to relativization in Japanese.[17]

4.1. Restrictive and nonrestrictive relative clauses.

The standard position in Japanese linguistics may be represented by Kuno (1973: 235), who states:

67) Japanese has no phonological, morphological, or syntactic distinctions between restrictive and nonrestrictive relative clauses.

In evidence he gives examples like:

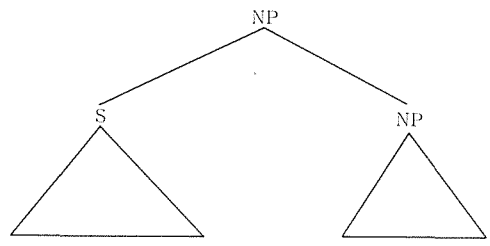
68) (=Kuno's (2))

a. watakusi ni eigo o osiete-iru Mary (nonrestrictive)
I to English teaching-is
'Mary, who is teaching me English'

b. watakusi ga sitte-iru Mary (restrictive)
I knowing-is
'the Mary that I know'.

Whether restrictive or nonrestrictive, the relative clause is placed before the head noun, and thus apparently we need only one structural source for the two, which is:

69)



Since ambiguity is inherent in this structure, it is yet to be seen, in any approach, how such distinction in the semantic interpretation between the restrictive and the nonrestrictive readings is to be systematically effected.

4.2. On distinguishing restrictive clause from nonrestrictive clause.

Since any syntactic structure that is a result of some syntactic rule is to be assigned a unique translation, the theory requires that restrictive and nonrestrictive relative clauses be syntactically different. We first give the following rule for forming restrictive relative clauses; note that this rule takes as the relative head noun an expression of category CN; hence no expression of category T (most typically PN) qualifies as an input argument of $F_{29,\ n}$[18].

70) S31. (Relative Clause CN)
If $\phi \in P_t$ and has the form ζ [$[PRO_n]_T -]_m$ ξ (m=1, 2, 3) and $\alpha \in P_{CN}$, then $F_{29,\ n}(\phi, \alpha) \in P_{CN}$, where $F_{29,\ n}(\phi, \alpha) = [\zeta\ \xi\ \alpha]_{CN}$.

T31. If $\phi \in P_t$, $\alpha \in P_{CN}$, and ϕ, α translate as ϕ', α' respectively, then $F_{29,\ n}(\phi, \alpha)$ translates as $\lambda x_m [\psi\ \&\ \alpha'(x_m)]$, where ψ is the result of replacing all occurrences of x_n in ϕ' by occurrences of x_m, where m is the least even number such that x_m has no occurrences in either ϕ' or α'.

Thus expressions of (68) cannot be formed by this rule since *Mary* is a proper noun, hence of category T.

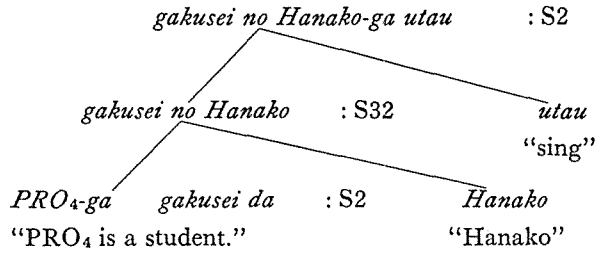
Aside from this theory requirement that restrictive and nonrestrictive relative clauses be syntactically different, there is some evidence that a uniform source for relative clauses like (69) is not enough for characterizing the syntactic structure of relative clauses. Before discussing this issue, let us first present our rule of Nonrestrictive Relative Clause Formation, which takes an expression of category t and an expression of category T and derives another expression of category T; semantically the translation effects conjoining of two clauses, which is probably no news to any of us.[19]

71) S32. (Nonrestrictive Relative Clause Formation)
If $\phi \in P_t$ and has the form ζ [$[PRO_n]_T -]_m$ ξ (m=1, 2, 3) and $\alpha \in P_T$, then $F_{30,\ n}(\phi, \alpha) \in P_T$, where $F_{30,\ n}(\phi, \alpha) = [\zeta\ \xi\ \alpha]_T$.

T32. If $\phi \in P_t$, $\alpha \in P_T$, and ϕ, α translate as ϕ', α' respectively, then $F_{30,\ n}(\phi, \alpha)$ translates as $\lambda P [\alpha' (\hat{}\lambda x_m [\psi\ \&\ \check{}P(x_m)]]$, where ψ is as in T31.

As an illustration of S32, I give the following abbreviated analysis tree and translation for the sample sentence below:

72) *gakusei no Hanako-ga utau*
student is Hanako sing
"Hanako, who is a student, sings."



Translation:

1. *PRO*$_4$*-ga gakusei da* ⇒ *gakusei'* (x_4)
2. *Hanako* ⇒ λQ ˇQ (h)
3. *gakusei no Hanako* ⇒ λP [λQ ˇQ (h) (ˆλx_6 [*gakusei'* (x_6) & ˇP (x_6)])] : T32
4. → λP [ˇˆλx_6 [*gakusei'* (x_6) & ˇP (x_6)] (h)] : λ-conversion
5. → λP [λx_6 [*gakusei'* (x_6) & ˇP (x_6)] (h)] : Down-Up Cancellation
6. → λP [*gakusei'* (h) & ˇP (h)] : λ-conversion
7. *gakusei no Hanako-ga utau* ⇒ λP [*gakusei'* (h) & ˇP (h)] (ˆ*utau'*) : T2
8. → *gakusei'* (h) & ˇˆ*utau'* (h) : λ-conversion
9. → *gakusei'* (h) & *utau'* (h) : Down-Up Cancellation

Thus (72) is semantically equivalent to:

73) *Hanako-ga gakusei de Hanako-ga utau*
Hanako student is+and Hanako sing
"Hanako is a student and Hanako sings."

Now I turn to the evidence that points toward the necessity of syntactically distinguishing restrictive and nonrestrictive relative clauses as we have done above.

4.2.1. *Rodman's case.*

Rodman (1976: 175) observes, of the following sentences:

74) (=Rodman's (34))

$$\left\{\begin{array}{l}\text{Every}\\ \text{Some}\\ \text{No}\\ \text{Any}\end{array}\right\}\text{ man, who is a mammal, walks.}$$

which are judged to be all ungrammatical, that "The restriction seems to be that no term phrase that lacks a unique, identifiable referent can be modified by a nonrestrictive relative clause. The term phrases in (34) either have no referent at all or no unique one."[20] Although I feel the notion "a unique, identifiable referent" needs some further elaboration, something obviously similar is going on in Japanese, too. Observe:

75) a. **kimi-no sitteiru dareka gakusei-ga sinda*
you know some student died
"Some student, whom you know, died."
b. **kimi-no sitteiru daremo gakusei-ga ko-nai*
any come-not
(lit.) "Any student, whom you know, does not come."
"No student, whom you know, comes."

Note that the subject of these sentences consists of the sequence [t T]$_T$, that is, an output of our Nonrestrictive Relative Clause Formation S32. That these sentences are ungrammatical thus strongly suggests that whatever is responsible for the ungrammatical English sentences (74) is also responsible for (75), thereby suggesting that the sequence [t T]$_T$ represents a nonrestrictive relative clause in Japanese. Note, furthermore, that the following, unlike (75), are perfectly grammatical.

76) a. *dareka kimi-no sitteiru gakusei-ga sinda*
some you know student died
"Some student you know died."
b. *daremo kimi-no sitteiru gausei-ga ko-nai*
any you know student come-not
(lit.) "Any student you know does not come."
"No student you know comes."

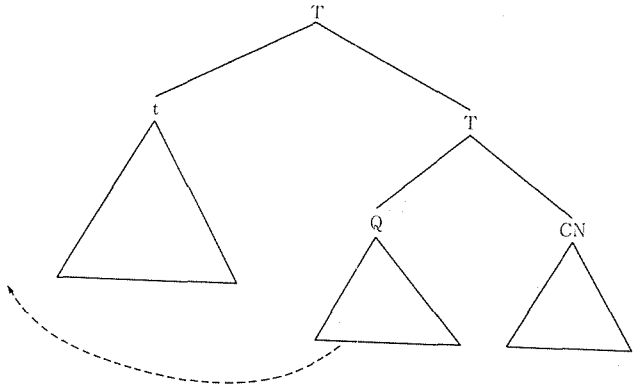
The subject of these sentences consists of the sequence [Q [t CN]$_{CN}$]$_T$, that is, a combination of a Q and the output of Relative Clause CN S31, which, as you may recall, is a kind of a derived CN formation rule. Since this sequence yields a restrictive relative clause reading, a most natural conclusion to draw from the observations above is that in the case of Japanese, the sequence [t T]$_T$ corresponds to nonrestrictive relative clauses while the sequence [t CN]$_{CN}$, when further combined with some modifier like Q to form a sequence [Q [t CN]$_{CN}$]$_T$, is the source for restrictive relative clauses. Without such formal distinction, the contrast between (75) and (76) is not easy to explain, or so it seems to me. We might further add that Q-float, with subsequent application of Scrambling, can only float *dareka* or *daremo* in (76) to the pre-verbal position; (75) does not meet the structural description of Q-float (for details see Sugimoto (1982). The Q-floated and scrambled versions of (76) are:

77) a. *kimi-no sitteiru gakusei-ga dareka sinda*
b. *kimi-no sitteiru gakuse-ga daremo ko-nai*

As expected, these each mean (76) (a) and (b) respectively. Thus, both (76) and (77) confirm that the sequence [t CN]$_{CN}$ is a source for a restrictive relative clause in Japanese.

In addition to the above observations, if one did not syntactically distinguish restrictive and nonrestrictive relative clauses, there is a trivial question of how sentences like (76) are to be generated, given the uniform structure (69). If one is to say that a Q, for instance, is moved to the clause initial position if the reading assigned to the relative clause is restrictive in the following diagram:

78)



then, besides the difficulty of properly assigning a translation to this structure, such a position simply amounts to admitting a syntactic difference between restrictive and nonrestrictive relative clauses. Compared with the relative ease with which our rules can assign translations to both restrictive and nonrestrictive relative clauses, it thus appears that the structural distinction that we posit for these is not an entirely useless one for the grammar of Japanese.

4.2.2. Sono *CN*.

Consider next a modifier like *sono* "the/that", which was alluded to in footnote 10 above. Though some other usage is possible[21], given a sequence like:

79) a. *sono zyosei*
the woman
"the woman"
b. *sono tetugakusya*
the philosopher
"the philosopher"

it is most natural to take *sono* "the/that" to be a modifier that takes a CN and derives a T. Indeed, we also have expressions like:

80) a. *odotteiru sono zyosei*
is dancing the woman
"the woman, who is dancing"

b. *sono odotteiru zyosei*
the is dancing woman
"the woman who is dancing"

where *sono* "the/that" combines with the CN *zyosei* "woman" in (a) and the CN *odotteiru zyosei* "woman who is dancing" in (b) (the latter of which, as you may notice, is an output of S31). But, as I have indicated in the gloss, (a) corresponds to the nonrestrictive reading, while (b) corresponds to the restrictive reading. That this is indeed the case may be confirmed from the following mini-discourse, where the asterisked expression constitutes an infelicitous continuation:

81) a. *kinoo henna oziisan-ni aimasita.*
yesterday strange old man met
"Yesterday I met a strange old man."

b. i. *inu-o tureteita sono oziisan-wa.....*
dog was taking the old man
"The old man, who was walking with a dog....."

ii. **sono inu-o tureteita oziisan-wa.....*
"The old man who was walking with a dog....."

Since the function of a restrictive relative clause in a conversation or discourse is to uniquely identify the referent by means of the characterization expressed in the clause and in the head noun, it is impossible, or at least very strange, to use this construction to refer to what or who has been already uniquely identified in the same discourse. The nonrestrictive relative clause, on the other hand, has no such discourse function; rather the clause in this construction is merely an added or juxtaposed characterization that a speaker regards may be useful for his or her hearer to know about the referent of the head noun. This difference in the discourse function manifests itself in the above type of situation, where a unique referent is introduced in the very beginning of the discourse; if an additional characterization is to be introduced later about such a uniquely identified referent by a relative clause, it must be done by means of a nonrestrictive relative clause. In other words, there is no need to re-identify such a uniquely identified individual.[22] That the asterisked continuation is infelicitous thus strongly suggests that it is functioning as a restrictive relative clause in (81b) while the non-asterisked version is functioning as a non-restrictive relative clause.[23] But if our rules S31 and S32 are correct, this is precisely what they predict, given that *sono* "the/that" is an expression that combines with a CN to derive a T. If we did not correlate the structural properties as we do in rules S31 and S32 with restrictive and nonrestrictive relative clauses, it would be difficult, it appears to me, to explain the contrast in acceptability between the two continuations as we see in (81) and similar cases.

4.3. Conflation of restrictive and nonrestrictive relative clauses.

In spite of the plausibility that (a) and (b) below are the sources for restrictive and nonrestrictive relative clauses respectively (in our Fragment of Japanese):

82) a. $[Q\ [t\ CN]_{CN}]_T$; $[\ [t\ CN]_{CN}]_T$
b. $[t\ T]_T$

a Q like *subete* "all" does not fit this pattern squarely. Observe, for instance:

83) a. *Hanako-wa subete-no nekutai-o siteiru dansei-to odotta*
Hanako all necktie is wearing man-with danced
"Hanako danced with all men who were wearing a necktie."
b. *Hanako-wa nekutai-o siteiru subete-no dansei-to odotta*
Hanako necktie is wearing all man-with danced
i. "Hanako danced with all men who were wearing a necktie."
ii. "Hanako danced with all men, who were wearing a necktie."[25]

Following the patterns of (82), (a) should yield a restrictive reading, which it does, and (b) nonrestrictive. While (b) does have a nonrestrictive reading (cf. footnote 25), the dominant reading is (bi), the restrictive reading. Thus:

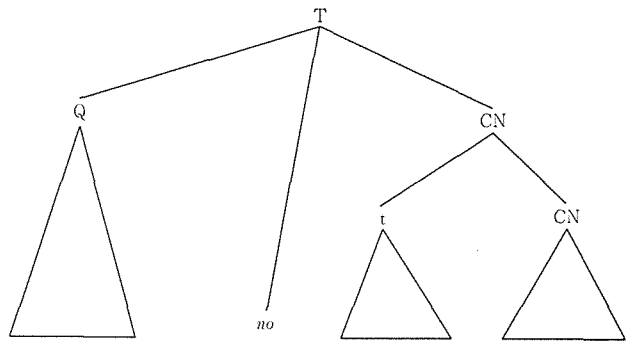
84) *Hanako-wa nekutai-o siteiru subete-no dansei-to odotta*
Hanako necktie is wearing all man-with danced
ga nekutai-o sitei-nai dansei-to-wa odor-anakatta
but necktie is not wearing man-with-topic dance-did not
"Hanako danced with all men who were wearing a necktie, but (she) did not dance with men who were not wearing a necktie."

I simply do not have any even remotely plausible explanation for such apparent conflation of restrictive and nonrestrictive relative clauses. It is not simply the case that all Qs behave this way: *dareka* "some" or *daremo* "any", for instance, does not show such conflation—neither (75a) or (75b) can be understood to be restrictive relative clauses. Without any good explanation, I thus propose that this kind of case be treated by a transformation of the following sort.

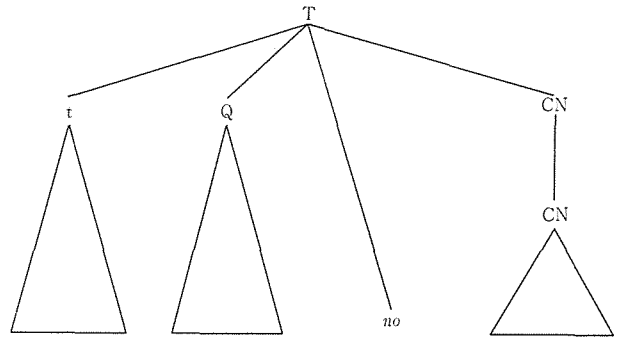
85) SS11. (Q-t Swap)
X, e, Q *no*, t, CN, Y
1, 2, 3, 4, 5, 6 ⟶
1, 4, 3, ϕ, 5, 6
where 2+3+4+5=T.
TT11. Identity mapping.

This rule converts the structure (a) below to (b).

86) a.



b.



Since the intervening *no* does not appear when *dareka* "some(one)" or *nanika* "some(thing)" combines with a CN to form a T, SS11 does not apply when the Q is one of these indefinite Qs. It is not clear whether all Qs are subject to SS11 in Japanese, and I will leave the matter as it is. Thus, where Qs are concerned, (a) below always represents a restrictive reading, while (b) may be either nonrestrictive or restrictive (due to SS11).

87) a. [Q *no* [t CN]$_{CN}$]$_{T}$
b. [t Q *no* CN]$_{T}$.

4.4. Some remaining problems.

The way we have formulated our rules S31 and S32, we cannot possibly derive a restrictive reading for a relative caluse with the head noun of category T (especially a PN). Thus the status of an expression like (68b) remains an open question. It is not even clear to me what kind of translation we should assign to such an expression. I do not know whether this is an inherent defect of an approach like ours, or, perhaps more likely, it is simply that we lack a good understanding about the semantic nature of T phrases, and PNs in particular. Note, for instance, that the referent of a PN like *Mary* or *Taroo* is fixed across indices in our grammar. In other words, we are saying that once you know the referent of, say, Taroo at particular time in a particular world, you ought to be able to pick up the referent of Taroo in any capacity at any time in any world. But this is not the way we go about when we actually use a PN.

Thus, in Kuno's example (68b), the referent of Mary is in some sense considered to be different from the one "you" are familiar with; it is the one "I" am familiar with. Obviously then in an actual language use, a PN is used in such a way that it can have a different referent (?) depending on different indexicals. In this sense it has something in common with a CN, since the latter denotes a set of objects whose membership may differ across indices. Viewed from such an angle, the basic difference between the two seems to lie in the fact that while the denotation of a CN is a set of individuals, a PN denotes, given an indexical evaluation, a single individual. If we equate such a single individual with a set of one member, i.e., a singleton, then it seems that all that is required of a PN is that its denotation be a singleton at any index every one of which is in some sense united to constitute that something that we call, say, Taroo. But how this kind of idle reflection can be integrated into a grammar remains a puzzle for somelne to solve. Carlson (1978), where he works with notions like abstract individuals and their indexical realizations, may in this respect be a promising approach though I cannot do anything more here than to point this out.

Another problem bearing on restrictive and nonrestrictive relative clauses is the point brought up by Rodman about examples like (74) or their counterparts in Japanese like (75). Why are these bad? There is nothing in the way we have formulated our Nonrestrictive Relative Clause Formation S32 that can show that these are semantically strange or bad. If Rodman's conjecture is correct that "no term phrase that lacks a unique, identifiable referent can be modified by a nonrestrictive relative clause," what does it mean for a term phrase to have "a unique, identifiable referent"? (Cf. footnote 20) Why, for instance, is it that while English *every* is not happy with the nonrestrictive relative clause (cf. (74)), Japanese *subete* "all", as in (83iib), is all right? Could this be because, even though these both relate to the totality of a given set, Japanese *subete* "all" is an expression that expresses or emphasizes the whole set of individuals while English *every* emphasizes more the individual in the whole set? Such contrast can be observed in paradigm cases like the following:

88) i. English:
  a. ?Every man, who is a mammal, walks.
  b. ?Each man, who is a mammal, walks.
  c. ?Any man, who is a mammal, walks.
  d. All men, who are mammals, walk.

ii. Japanese:
  a. ?*honyuurui dearu sorezore-no ningen-ga aruku*
  mammal is each human walk
  (lit.) "Each man, who ia a mammal, walks."
  b. *honyuurui dearu subete-no ningen-ga aruku*
  mammal is all human walk
  "All men, who are mammals, walk."

Unless the notion "a unique, identifiable referent" can be narrowed down along this or some other line, we will not be able to characterize the strangeness of (75) or (88iia) based

on Rodman's conjecture. Since we want to characterize a nonrestrictive relative clause with an indefinite bare CN head as also semantically odd or strange, some convincing explanation, whether along the line of Rodman's conjecture or something else, is urgently needed in order to block or mark as semantically ill-formed or characterize as pragmatically unacceptable sentences like (75).

5. Summary.

The main purpose of this paper has been to show that bare CNs, or CNs that appear without any modifier in a sentence, whether basic or derived, must be treated as Ts. Semantically we seem to need two separate translations—one corresponding to an existentially quantified CN (section 2) and one corresponding to a definite description (section 3). Though our particular proposal for generating these expressions may in the long run turn out to be ill-motivated, it appears to me that we have to have at least some kind of quantification built into the translations of both indefinite and definite bare CNs in order to explain some of the semantic facts noted in those sections. Since contextual factors seem to influence greatly the interpretations of bare CNs, it could be that rules like S29 and S30 are to be integrated as part of pragmatics (in the lingustic sense of this term). In section 4 we took up a special case of bare CNs, that is, restrictive relative clauses, and their related construction nonrestrictive relative clauses. We argued that it would be best to syntactically distinguish these two kinds of relative clauses (4.2) in spite of an apparent case of conflation of these structures (4.3) and some unresolved problems (4.4).

Footnotes

1) The reason we have to have separate syntactic rules for T and CN is because their translations differ. Since each syntactic rule or the structural operation therein has to be uniquely translated, it follows we have to have different syntactic rules for Ts and bare CNs so long as their translations differ for each syntactic rule.
2) I am disregarding the translation for tense.
3) Recall, for instance, the feature specification approach based on the binary feature [±specific] in the transformational literature, where it was proposed, if my memory serves me right, that such a feature be assigned to a noun or a noun phrase—an approach that, from our viewpoint, seems to disregard an intensional context creating verb or construction.
4) It might be well to note here that regarding an indefinite bare CN as an existentially quantified CN reveals the ambiguity in (i).
   i) *subete-no tetugakusya to ongakuka-ga kuru*
      every philosopher and musician come
      (lit.) "Every philosopher and musician comes."
   This sentence is ambiguous between the following two readings:
   ii) a. Every philosopher and every musician comes.
      b. Every philosopher and a musician comes.
   Note that Q-floated version of (i):
   iii) *tetugakusya to ongakuka-ga subete kuru*
      philosopher and musician every come
   only has reading (iia) above.

5) Unfortunately we cannot discuss the conditions for definiteness; to do so would perhaps require another much longer paper.

6) That is, if it is a rigid designator, the individual is invariable across indices; otherwise it may show cross-index variation.

7) I remain non-committal as to the problem of gender. For a semantic treatment of pronoun genders, cf. Cooper (1975).

8) The following is an adaptation of example (35a) in Cooper (1979: 73).

9) This shows that no such paraphrase relation:

i) definite bare CN=*sono* CN

holds in Japanese despite the pedagogical emphasis that is placed in school grammar in Japan in translating English definite description into Japanese, where students are taught to substitute *sono* "the/that" for the definite article *the*. If we do this in the second sentence in the English translation of (53) for "the U.S. President", this will invariably mean (54) in Japanese. In general, *sono* CN is good as a translation of an English definite description if and only if there is referential binding between this and some preceding element. Otherwise, it appears a bare CN better serves the purpose of translating English definite descriptions. As for the usage of *sono* "the/that", see Kuno (1973: Chapter 24).

10) We assume, of course, that the two sentences of (40) have the same referent point of time in the past.

11) Though there are certain further complications, Cooper's (1979) point is that in the following discourse:

i) (=Cooper's (35a))

This year the president is a Republican. Next year he will be a Democrat.

the lazy pronoun reading of *he* can be derived if we give a lazy pronoun a translation that corresponds to a translation of a definite description so that a translation of the second sentence of (i) will come out as:

ii) (=Cooper's (41))

$W[\exists u[\forall v[\,[\check{}P_0](v) \equiv u=v] \wedge democrat'(u)]\,]$.

This is tantamount to saying:

iii) It will be the case that the one with some property P_0 will be a Democrat.

He says, on page 75, of the above formal translation (ii) that "According to some contexts of use P_0 will denote the property of being a president and relative to such a context (41) will be true..." He then goes on to say on the same page, "Other contexts of use will assign a different property to P_0 and we will obtain a nonanaphoric reading for the pronoun." The original motivation for this kind of treatment of lazy pronouns, it seems to me, is the fact that one can draw a parallel between a free property variable as appears in the translation of a lazy pronoun (i.e., P_0) and a free individual variable as appears in the translation of ordinary pronouns (cf. (44) and (45) above). They both get assigned a value according to a context of use. This in a sense is an eclectic treatment which is at the same time semantic and pragmatic, but in view of the fact that pragmatic account is necessary any way at least in the case of deictic pronouns, there is no new formal mechanism added in the above treatment of lazy pronouns.

12) According to Greg Lee (personal communication), Paul Postal discussed examples of this sort in a manuscript "Horrors of anaphora" back in '60's. One of Postal's examples that illustrates the same point was:

i) The alligator lost its tail, but then regrew it.

13) We will get a sloppy reading if, instead of the second sentence of (65), we use *soo suru* "do so" construction as in:

i) *Ziroo mo soo sita*
Ziroo also so did
"So did Ziroo."

Soo suru "do so" thus may be better regarded as a pronoun (or rather proverb) of laziness.

14) This is not to say that our approach is inherently inferior to the standard generative approach. So far as I know, no formally satisfactory account of these and other related topics has ever been proposed that meets syntactic and semantic adequacy.

15) Under some circumstances a pronoun may appear in the position of the relativized NP in Japanese:

i) $[\,[$*zibun-ga kaita*$]_t$ *ronbun-o yabutta*$]_t$ *gakusei*
$[\,[$*self wrote*$]_t$ *dissertation tore*$]_t$ *student*
"a student who tore the dissertation he (lit. self) wrote".

16) Cf. Keenan and Comrie (1977).

17) Cf. Kuno (1973: 238–40). A typical example violating Ross's complex NP constraint is:

i) (=Kuno's (20))
[kite-iru yoohuku-ga yogorete-iru] sinsi
wearing-is suit dirty-is gentleman
"a gentelman who the suit (he) is wearing is dirty"

where the deepest relative clause *kite-iru* "wearing-is" lacks both subject *sinsi* "gentleman" and object *yoohuku* "suit" due to relativization. On the other hand, an example like the following, which is taken from McCawley (1976: 297) with slight modification, is ungrammatical.

ii) *[$[nonde\text{-}ita]_t$ *hito-ni Taroo-ga hanasikaketa*$]_t$ *nomimono*
[$[was\ drinking]_t$ *person Taroo spoke to*$]_t$ *beverage*
"the beverage which Taroo spoke to a man who was drinking".

As for the interesting correlation between themes and relative clauses that may have relevance to the acceptability of sentences like (ii), see Kuno (1973: Chapter 21).

18) The somewhat lengthy translation rule pertaining to the variable x_m is necessary to avoid collision of variables; the translation is based on that given in footnote 12 (Editor's note) to PTQ. I also assume the morphological adjustment of the form the copula *da* takes in the relative clause: that is, *no* if it follows a predicate nominal CN or T, and *na* if it is part of a nominal adjective. Cf. (72).

19) Cf. Rodman (1976) about restrictive and nonrestrictive relative clauses within the framework of MG.

20) But Greg Lee (personal communication) finds a sentence like the following perfectly grammatical:

i) No student, who would have had to have an ID to enter, could possibly have gotten in.

If this is so, then obviously three must be something more going on about sentences like (74) than what it is made to look like by Rodman's observation.

21) That is, *sono* may combine with a T as in:

i) *sono sannin-no zyosei*
the three woman
"the three women".

Though there is no doubt that this usage is related to the one we are discussing now, it is not clear how such relation may be captured within our framework.

22) For arguments along these lines, Vendler (1967: "On singular terms") is very instructive.

23) John Haig (personal communication) has pointed out to me that if one has a comma intonation after *sono*, (81bii) is also a good continuation. I agree with this observation. At present I do not know what to do with the effects of pause or certain intonation vis-à-vis our grammatical framework.

24) The point brought up in this section is also pointed out by Kamio (1976: 42). I am grateful to John Haig for bringing this paper to my attention.

25) For some reason that I do not understand, the non-restrictive reading is dominant if we change the tense of the relative clause to the past:

i) *Hanako-wa nekutai-o siteita subete-no dansei-to odotta*
Hanako necktie was wearing all man-with danced
"Hanako danced with all men, who were wearing a necktie."

Josephs (1972) discusses similar and other tense related phenomena of relative clauses in Japanese.

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